• COLORADO RIVER •

AQUEDUCT NEWS

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Vol. IV FEBRUARY 10, 1937 No. 3

Sunset on Monument Ridge in the Copper Basin country. This excellent photograph, taken by M. W. D. staff photographer Will Fox, shows the western side of Monument Ridge near which the District's Copper Basin Reservoir will be located.

• COLORADO RIVER •
AQUEDUCT NEWS
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

306 West Third St.
Los Angeles, California

Published twice monthly in the interest of Field and Office Workers on the Colorado River Aqueduct, and for the information of all other citizens of the Metropolitan Water District.

Vol. IV February 10, 1937 No. 3

Whipple Mt. Tunnel Lining Completed On January 26

Construction progress figures on the Whipple Mountain tunnel have reached the 99.9 per cent completed stage, and work on a number of other tunnels is rapidly approaching the finish line.

The concrete lining work in the 32,238-foot Whipple Mt. tunnel was completed on January 26. Tunnel Superintendent L. M. Ramey's crews began placing the concrete invert in the tunnel on December 3, and completed the work in record breaking time in spite of the lay-off during the holiday period.

Using the same double unit Pumpcrete with which they had completed the placing of the tunnel arch on October 28, these Whipple crews made their best progress during the week ending January 9, when they placed 12,220 lineal feet of invert, at an average of 643.2 ft. per shift.

Down on Division 3, Broderick and Gordon's concreting crews completed the placing of tunnel arch in the East Eagle Mountain tunnel on January 23. Concrete work on the arch was started in this 9,440-foot tunnel on November 25, 1936, using a single unit pneumatic placing machine.

Under the direction of General Superintendent John Will, the East Eagle crews made their best progress during the week ending December 19, 1936. Working 12 shifts in that week, the concrete gangs placed 1,469 lineal feet of arch—an average of 122.4 lineal feet per shift. In terms of cubic yards, this amounted to 4,389 placed during the week, and an average of 365.8 cubic yards placed per shift.

The placing crews who recently completed the concrete work in the West Portal of the San Jacinto tunnel. Supt. Thomas, fourth from left, lower row.

Directory

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Divisions 1 & 2....W. E. Whittier
Divisions 2 & 3.....John Stearns
Division 4.....R. C. Booth
Divisions 5 & 6.....J. B. Bond
Distribution.....R. B. Diemer
Transmission.....Robert N. Allen

SUPERINTENDENTS
(Main Aqueduct Tunnels)

Colorado River, Copper Basin and Whipple Mt. Tunnels, Walsh Construction Co., L. M. Ramey, Tunnel Supt.

Coxcomb and East Iron Mt. Tunnels, Winston Bros., R. V. Johnson, Gen. Supt.

Iron Mt. Tunnel, West Portal, Utah Construction Co., Ben Arp, Gen. Supt.

East Eagle Mt. Tunnel and West Eagle Mt. Tunnel, east portion, Broderick & Gordon, John Will, Gen. Supt.

Coachella Tunnel, Dist. Force Acct., R. C. Booth, Gen. Supt.

East Coachella Tunnel and 1000 Palms Tunnel, Concrete, V. T. Davis, Supt., J. C. Fisher, General Foreman.

All Coachella Siphon Construction, M. Hjalmarson, Supt.

West Coachella Tunnels and Conduits, Concrete, Edwin Noon, Supt.

San Jacinto Tunnel, District Force Acct., B. C. Leadbetter, Gen. Supt.; A. L. Simpson, John Austin and C. E. Sides, Tunnel Supts.; Chas. F. Thomas, Jr., Supt.

Valverde Tunnel ,Dravo Contr. Co., R. W. Remp, Gen. Supt.

(Distribution Tunnels)

Monrovia Tunnels Nos. 1, 2 and 3, West Construction Co., H. E. Carleton, Gen. Supt.; O. V. Humason, Peter Brisbols and Luther Dennis, Tunnel Supts. Concrete Supt., E. M. Penn.

Pasadena Tunnel, San Rafael Tunnels Nos. 1 and 2, and Monrovia Tunnel No. 4, L. E. Dixon Co., Bent Bros., Inc., and Johnson, Inc., S. D. Hackley and W. N. Evans, Supts.

(Canal, Siphon, Conduit)

Schedules Nos. 1, 1A, 1B, 10, 10A, 10B, 11, 11A, 11B, 11C, 13, 13A, and 13B, Aqueduct Construction Co., S. T. Corfield, Gen. Supt.; Charles Harlowe, Jr., Excav. Supt.

Schedules Nos. 2, 2A, 2B, 3, 3A, 3B, 7, and 7A, Barrett & Hilp and Macco Corp.; H. W. McKinley, Supt.

Schedules Nos. 4, 4A, 5, and 5A, Jahn & Bressi Construction Co., Joseph Muscolo, Gen. Supt.; Dominick Bressi, Asst. Gen Supt.

Schedules Nos. 6, 8, 8A, and 8B, Clyde W. Wood and M. J. Bevanda, A. F. Weesner, Gen. Supt.

Schedules Nos. 9, 9A, 9B, and 9C, The Utah Construction Co., Ben Arp, Gen. Supt.

Schedules Nos. 12 and 12A, Three Companies, Inc., John Will, Supt.

Schedules Nos. 14, 15, and 16, Thompson - Starrett Co., Inc., Rodney Smith, Gen. Supt.; William Hayes, Excav. Supt.

Schedule 17, Dist. Force Acct., H. Hjalmarson, Supt., (Fan Hill).

Schedules Nos. 18, 19, and 20, J. F. Shea Co., Inc., J. G. Shea, Gen. Mgr.; H. F. Rennebohm, Supt.

Schedules Nos. 20A, 20B, 20C, 21, 22, and 23, The Griffith Co., Harry Davis, Supt.

(Distribution Pipe Line)

Schedules No. 4P and 5P, American Concrete & Steel Pipe Co., Wm. A. Whiting, Gen Supt.; D. H. Rankin, Plant Supt. and Const. Supt.

Schedules 6P and 7P, J. F. Shea Co., Inc., J. G. Shea, Gen. Mgr.; Ed. H. Shea, Gen. Supt.

Schedules 10P, United Concrete Pipe Corp., John Huber, Plant Supt.; Roy Richards, Const. Supt.

Schedules 2B and 2S, Western Pipe & Steel Co., L. L. White, Supt.

(Dams)

Cajalco dam, The Griffith Co., Harry Davis, Gen. Supt.

Parker dam, J. F. Shea Co., Frank Crowe, Gen, Supt.; E. A. Moritz, Constr. Eng., U.S.B.R.

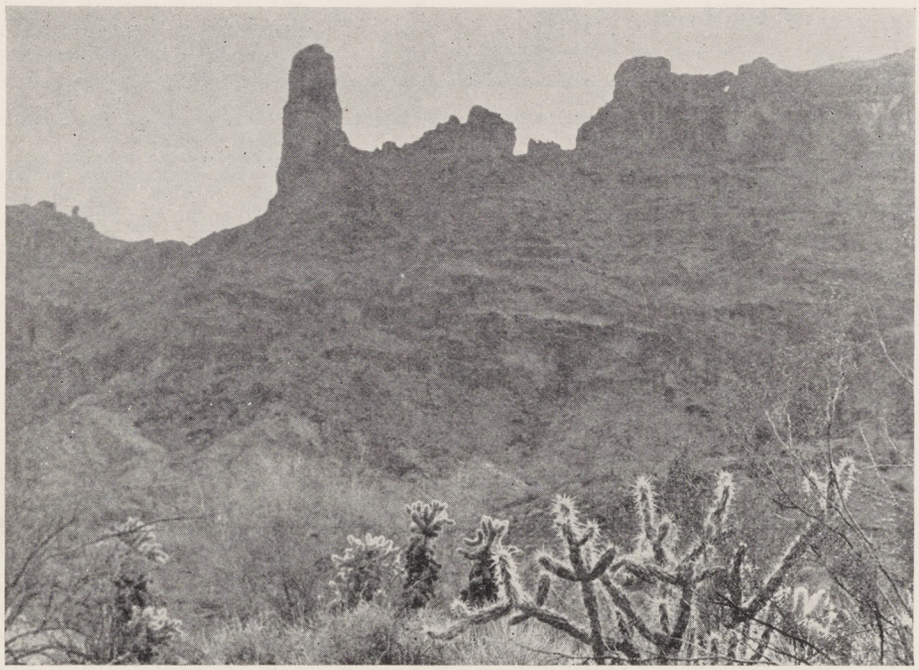
(Pumping Plants)

Intake and Gene, Winston Bros. and Crowell, R. A. Crowell, Supt., F. T. Hillman, Engineer.

Iron Mountain, Wood and Bevanda; Grant Miner, Supt.

Eagle Mountain, L. E. Dixon Co.; S. H. Strohacker, Supt.

Hayfield, Dixon and Case; Crawford Strohacker, Supt.



MONUMENT PEAK

This well known landmark in the Copper Basin area is in the vicinity of the Copper Basin Dam soon to be constructed by the District. This view was taken from the eastern side of the ridge shown on the cover of this issue.

Bids Called For on Gene Wash and Copper Basin Dams

Action was taken on February 12 toward the construction of two important features on the aqueduct when the District advertised for bids for the building of the Gene Wash and the Copper Basin dams. These dams when completed will create two reservoirs of corresponding names in Division 1 near the extreme easterly end of the aqueduct. Bids for the work, which is to be done under Specifications No. 190, will be opened on March 18, 1937, and the structures are to be completed by September 30, 1938.

The Gene dam, which is nearest the Colorado River and in the vicinity of Division 1 headquarters, will be a concrete arch dam 156 feet high. The Gene Wash reservoir will be formed by this main arch dam, and an earth fill dike with a concrete face. This reservoir will receive its water from the Intake Pumping plant through the Colorado River tunnel. It will cover an area of 250 acres and will have a capacity of 6,300 acre feet of water.

The Copper Basin dam will also be a concrete arch dam, 210 feet high, and will form a reservoir covering an area of 435 acres with a capacity of 20,700 acre feet of water. It is located between the Copper Basin tunnels and the Whipple Mountain tunnel. Both reservoirs will serve as equalizing and desilting basins.

Parker Dam Work Not Damaged By High River Water

Contrary to reports published in the daily papers on Monday, February 8, there was no damage to construction work at Parker Dam due to heavy rains or high river waters on the week-end of February 6 and 7.

Heavy rains were felt in the Parker Canyon region during this period when severe storms and floods were sweeping most of Southern California. According to reports from the Reclamation Office at Parker Dam, the Colorado River itself showed little or no rise due to the influence of Boulder Dam. However, the Bill Williams River, which joins the Colorado immediately north of the dam site, showed a very appreciable rise, reaching a flood stage with its crest being noted late on Sunday afternoon, February 7.

River water flowed against the upstream cofferdam, which is completed, but at the crest of the flood it had approximately 30 feet of freeboard. All of the water was by-passed through the diversion tunnels without damage to the cofferdam or other features at Parker Dam.

A night view of the front door of the Banning office during the recent cold wave. This picture may bring back pleasant memories to the Banning office force next summer, when the temperature goes above the 100 mark.

TUNNELS

January 1 to January 31, 1937

TUNNEL EXCAVATION (MILES)

	Completed	Remaining
Aqueduct	87.19	4.92
Distribution	15.91	0.30
Total	103.10	5.22

*TUNNEL LINING (MILES)

	Completed	Remaining
Aqueduct	77.66	14.45
Distribution	6.70	9.48
Total	84.36	23.93

*Arch considered to equal 0.9 completed section.

TUNNEL PROGRESS

CONTRACTOR	TUNNEL	LENGTH IN FEET	EXCAVATION IN FEET: NUMBER OF SHIFTS	AVERAGE PER SHIFT	THIS PERIOD	TOTAL TO DATE	REMAINING	LINING IN FEET: ARCH OR INVERT	NUMBER OF SHIFTS	AVERAGE PER SHIFT	THIS PERIOD	TOTAL TO DATE	REMAINING
AQUEDUCT—CONTRACT													
WALSH CONSTRUCTION CO.	COLORADO RIVER	5,482		Completed		5,482	0	Arch			0	5,475	7
								Invert			0	5,475	7
	COPPER BASIN NO. 1	705		Completed		705	0	Arch			0	696	9
								Invert			0	696	9
	COPPER BASIN NO. 2	11,568		Completed		11,568	0	Arch			0	11,568	0
								Invert			0	11,568	0
	WHIPPLE MOUNTAIN	(32,238)				(32,238)	(0)	Invert	28	570.6	15,978	32,229	9
	East from Adit	18,336		Completed		18,336	0	Arch			0	18,327	9
	West from Adit	13,902		Completed		13,902	0	Arch			0	13,902	0
WINSTON BROTHERS	IRON MT. (E. PORTION)	(23,645)				(23,645)	(0)						
	East from Shaft	9,902		Completed		9,902	0	Invert			0	9,902	0
								Arch			0	9,902	0
	West from Shaft	13,743		Completed		13,743	0	Invert			0	13,743	0
								Arch			0	13,743	0
UTAH CONSTRUCTION CO.	IRON MT. (W. PORTION)	16,208		Completed		16,208	0	Arch			0	16,208	0
								Invert			0	16,208	0
WINSTON BROTHERS	COXCOMB (From E. Portal)	17,795		Completed		17,795	0	Arch	75	83.9	6,290	12,017	5,778
								Invert			0	0	17,795
BRODERICK & GORDON	E. EAGLE (From W. Portal)	9,440		Completed		9,440	0	Arch	41	104.9	4,302	9,440	0
	W. EAGLE (E. PORTION)	(15,845)		Completed		(15,845)	(0)	Invert			0	0	9,440
	East from Adit	7,871				7,871	0	Arch			0	15,845	0
	West from Adit	7,974				7,974	0	Invert	22	276.9	6,091	6,091	9,754
	TOTALS Ft.	132,926				132,926	0	Arch	116	91.3	10,592	127,123	5,803
	Miles	(25.18)				(25.18)	0	Invert	50	441.4	22,069	95,912	37,014
AQUEDUCT — FORCE ACCOUNT													
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	EAST COACHELLA	(96,605)				(96,605)	0						
	East Portion	28,512		Completed		28,512	0	Arch			0	28,512	0
								Invert			0	28,129	383
	West Portion	68,093		Completed		68,093	0	Arch	81	56.0	4,538	59,909	8,184
								Invert	32	436.0	13,951	13,951	54,142
	1000 PALMS NO. 1 (From W.P.)	16,058				16,058	0	Arch			0	16,058	0
								Invert	20	407.4	8,149	16,058	0
	1000 PALMS NO. 2	3,838		Completed		3,838	0	Arch			0	3,838	0
								Invert			0	3,838	0
	WIDE CANYON NO. 1	14,305		Completed		14,305	0	Arch			0	14,305	0
								Invert			0	7,516	6,789
	WIDE CANYON NO. 2	848		Completed		848	0	Arch			0	848	0
	SEVEN PALMS (From E. Prtl)	4,810				4,810							
	(From W. Prtl)	11,920		Completed		11,920	0	Arch			0	16,730	0
	LONG CANYON	15,305		Completed		15,305	0	Invert	35	452.2	15,826	15,826	904
								Invert				15,305	0
	BLIND CANYON	6,836		Completed		6,836	0	Arch			0	15,305	0
								Arch			0	6,836	0
	MORONGO NO. 1	5,725		Completed		5,725	0	Invert			0	6,836	0
								Arch			0	5,725	0
	MORONGO NO. 2	1,892		Completed		1,892	0	Invert	20	286.2	5,725	5,725	0
								Arch			0	1,892	0
	SAN JACINTO	(68,849)			(841)	(42,861)	(25,988)	Invert	7	270.3	1,892	1,892	0
	Cabazon Shaft to East Portal	8,880			0	8,880	0	Arch	8	29.1	233	233	35,464
	Cabazon to Lawrence	26,817	93	7.0	648	12,052	14,765	Invert	6	21.7	130	130	35,567
	Cabazon Pioneer	18,119	93	7.1	659	3,560	14,559						
	Lawrence Adit	5,651	93	2.9	270	2,484	3,167						
	Potrero Pioneer	15,163	93	3.7	342	4,297	10,866						
	Potrero to Lawrence	17,670	93	2.1	193	6,447	11,223	Arch	44	99.4	4,373	14,953	18,199
	Potrero Shaft to West Portal	15,482		Completed		15,482	0	Invert	0	0	0	14,953	18,199
	TOTALS Ft.	246,991	186	4.5	841	221,003	25,988	Arch	133	35.9	9,144	185,144	61,847
	Miles	(46.78)			(0.16)	(41.86)	(4.92)	Invert	120	380.6	45,673	130,159	116,832
DISTRIBUTION—CONTRACT													
GRIFFITH CO.	CAJALCO OUTLET	2,439		Completed		2,439	0					0	2,439
WEST CONSTRUCTION CO.	MONROVIA NO. 1 (From W.P.)	7,868		Completed		7,868	0					7,796	0
	MONROVIA NO. 2 (From Jct.1)	940		Completed		940	0				Completed	856	0
	MONROVIA NO. 3	(32,105)			(608)	(31,532)	(573)		75	33.9	2,540	3,001	29,093
	East from Adit	11,340		Completed		11,340	0						
	West from Adit				0	5,913							
	From West Portal	20,765	86	7.1	608	14,279	573						
DIXON, BENT BROS. & JOHNSON	MONROVIA NO. 4 (From W.P.)	8,133	70	13.3	930	7,105	1,028					0	8,134
	PASADENA (From West Portal)	12,140		Completed		12,140	0		71	20.7	1,471	9,743	2,397
	SAN RAFAEL No. 1 (From W.P.)	4,047		Completed		4,047	0		66	18.1	1,192	1,710	2,318
	SAN RAFAEL No. 2 (From E.P.)	5,669		Completed		5,669	0					0	5,661
	TOTALS Ft.	73,341	156	9.8	1,538	71,740	1,601	Full	212	24.5	5,203	23,106	50,041
	Miles	13.89			(0.29)	(13.59)	(0.30)	Section			(0.99)	(4.38)	(9.48)

COMPLETED TUNNELS

	CONTRACTOR	TUNNEL	Length in Miles	Work Started	Work Completed
AQUEDUCT	MORRISON-KNUDSEN CO.	Mecca Pass, No. 1, 2 & 3	1.13	7-17-33	2-10-35
	WEST CONSTRUCTION CO.	Whitewater Nos. 1 & 2	1.94	7-18-33	4-15-35
	SHOFNER & GORDON	Hayfield No. 2	1.03	7-8-33	7-27-35
	HAMILTON & GLEASON	Bernasconi	1.18	4-19-33	11-21-35
	J. F. SHEA CO., INC.	Cottonwood	3.81	6-14-33	12-29-35
	HUNKIN-CONKEY CON. CO.	Hayfield No. 1	1.84	10-21-33	1-9-36
	DIXON & BENT BROS.	W. Eagle—West Portion	2.02	9-8-33	3-12-36
	DRAVO CONTRACTING CO.	Valverde	7.20	6-7-33	10-18-36
		TOTALS	20.15		
DISTRIBUTION	J. F. SHEA CO., INC.	Sierra Madre	1.27	9-1-35	10-31-36
	DIXON, BENT BROS. & JOHNSON	Pasadena Extension	1.05	10-5-35	11-24-36
		TOTALS	2.32		

ION PROGRESS

CANAL, CONDUIT, SIPHON & PIPE LINES

January 17 to January 30, 1937

CANAL, CONDUIT AND SIPHON (MILES)

	Completed	Remaining
Excavation	132.08	13.59
Concrete	123.23	21.39
Back Fill	58.90	23.56

DISTRIBUTION PIPE LINE (MILES)

	Completed	Remaining
Excavation	24.63	21.38
Concrete	23.28	22.73
Back Fill	21.75	24.26

AQUEDUCT

SCHED. NO.	CONTRACTOR	FEATURES	Length In Feet	EXCAVATION—Feet			CONCRETE—Feet			BACKFILL—Feet		
				Period	To Date	Remain'g	Period	To Date	Remain'g	Period	To Date	Remain'g
1	AQUEDUCT CONSTR. CO.	Conduit and Siphons	22,025	0	22,025	0	0	22,025	0	0	22,025	0
2	BARRETT & HILP AND MACCO CORP.	Conduit and Siphons	30,569	0	29,984	585	767	25,651	4,918	375	22,775	7,794
3		Canal and Siphons	40,499	0	40,084	415	150	39,887	612	0	7,800	4,545
4	JAHN & BRESSI CONSTR. CO.	Canal and Siphons	53,218	0	53,218	0	0	53,218	0	0	3,075	0
6	WOOD AND BEVANDA	Siphon	15,521	0	15,521	0	0	15,521	0	0	13,043	2,478
7	BARRETT & HILP & MACCO CORP.	Canal and Conduit	27,707	0	27,707	0	0	27,707	0	0	12,170	0
8	WOOD AND BEVANDA	Canal and Siphons	49,339	0	49,339	0	0	49,339	0	0	7,090	800
9	UTAH CONSTRUCTION CO.	Canal, Conduit and Siphons	47,363	0	47,363	0	10	47,363	0	400	4,875	1,324
10	AQUEDUCT CONSTR. CO.	Canal and Siphons	44,505	0	44,505	0	0	44,505	0	0	3,594	1,256
11		Canal, Conduit and Siphons	44,003	0	43,445	558	705	21,220	22,783	0	3,083	7,240
12	THREE COMPANIES, INC.	Conduit and Siphons	32,977	951	30,653	2,324	0	24,663	8,314	0	23,030	9,947
13	AQUEDUCT CONSTR. CO	Canal, Conduit and Siphons	31,965	0	31,965	0	60	31,965	0	0	1,908	1,757
14	THOMPSON-STARRETT CO.	Conduit and Siphons	32,366	0	32,366	0	0	32,366	0	0	32,366	0
15		Conduit and Siphons	35,849	1,871	24,270	11,579	1,526	18,765	17,084	2,065	16,938	18,911
16		Conduit and Siphons	19,359	0	0	19,359	0	0	19,359	0	0	19,359
17	M. W. D.—FORCE ACCT.	Conduit and Siphons	21,950	310	21,950	0	331	21,317	633	157	17,064	4,886
18	J. F. SHEA CO., INC.	Conduit and Siphons	27,537	84	27,537	0	30	26,925	612	1,338	21,847	5,690
19	J .F. SHEA CO., INC.	Conduit and Siphons	37,364	500	500	36,864	0	0	37,364	0	0	37,364
20		Siphons	18,618	0	18,618	0	0	18,618	0	0	18,618	0
20 A & B	M. W. D.—FORCE ACCT.	Siphons	735	0	705	30	0	0	735	0	0	735
3	WINSTON BROS. CO. & WILLIAM C. CROWELL	Siphon (Gene Inlet)	1,877	0	1,850	27	0	1,798	79	0	1,478	320
4		Siphon (Copper Basin)	450	0	450	0	0	0	450	0	0	0
	TOTALS		635,796	3,716	564,055	71,741	3,576	522,853	112,943	4,335	232,779	124,406

DISTRIBUTION PIPE LINES

1	AMER. CONC. & STL. PIPE CO.	Precast Concrete Pipe	12,277	0	0	12,277	0	0	12,277	0	0	12,277
2	WESTERN PIPE & STL. CO.	Welded Steel Pipe	54,530	1,196	36,714	17,816	125	29,816	24,714	2,670	25,412	29,118
3	AMER. CONC & STL. PIPE CO.	Precast Concrete Pipe	20,124	0	0	20,124	0	0	20.124	0	0	20,124
4			25,867	0	25,867	0	0	25,867	0	0	25,867	0
5			24,895	1,820	21,305	3,590	1,802	21,275	3,620	1,775	19,963	4,932
6	J. F. SHEA CO., Inc.	Precast Concrete Pipe	27,348	1,898	20,897	6,451	1,896	20,795	6,553	945	19,094	8,254
7			30,044	0	0	30,044	0	0	30,044	0	0	30,044
8	UNITED CONC. PIPE CORP.	Precast Concrete Pipe	24,529	0	24,529	0	0	24,529	0	89	24,529	0
9			8,697	0	0	8,697	0	0	8,697	0	0	8,697
10			10,517	726	726	9,791	657	657	9,860	0	0	10,517
11			4,105	0	0	4,105	0	0	4,105	0	0	4,105
	TOTALS		242.933	5,640	130,038	112,895	4,480	122,939	119,994	5,479	114,865	128,068

Miscellaneous Construction

January 17 to January 30, 1937

AQUEDUCT PUMPING PLANTS AND APURTENANT WORKS

CONTRACTOR	FEATURES	EXCAVATION—Cu. Yds.				CONCRETE—Cu. Yds.				STEEL—Tons			
		Est.Quan.	Period	To Date	%	Est.Quan.	Period	To Date	%	Est.Quan.	Period	To Date	%
WINSTON BROS. CO. & WILLIAM C. CROWELL	Intake Plant	106,312	0	106,312	100.	18,145	2,611	9,091	50.1	1,712	124.1	387.4	22.6
WOOD AND BEVANDA	Gene Plant	92,600	0	89,754	96.9	13,379	193	9,606	71.8	2,052	259.0	1,331.7	64.9
L. E. DIXON CO.	Iron Mt. Plant	358,700	368	271,334	75.6	19,897	1,398	12,421	62.4	1,707	57.5	757.1	44.4
L. E. Dixon & Case Const. Co.	Eagle Plant	250,000	2,211	231,709	92.7	21,122	1,032	2,716	12.8	2,160	114.3	156.7	72.5
	Hayfield Plant	328,900	32,200	275,115	83.6	32,319	0	0		2,738	0	0	0
	TOTALS		34,779	974,224			5,234	33,834			554.9	2,632.9	

PARKER RESERVOIR—SIX COMPANIES, INC.

FEATURES	Est. Quan.	Period	To Date	Percent
Diversion Tunnels—Excav.	3,463 Ft.	0	3,463	100
Diversion Tunnels—Concrete	3,363	0	3,363	100
Dam, Forebay, etc., Excav.	2,107,700 C.Y.	73,000	1,112,054	52.8
Dam Concrete	260,000 C.Y.	0	0	0

CAJALCO RESERVOIR—GRIFFITH COMPANY

FEATURES	Est. Quan.	Period	To Date	Percent
Diversion Tunnel	2,000 Ft.	0	2,000	100
Dam & Dike Excavation	651,000 C.Y.	26,500	501,938	77.1
Dike Fill	4,182,000 C.Y.	60,000	3,494,000	83.5
Dam Fill	3,410,000 C.Y.	7,400	917,300	26.9

BOULDER TRANSMISSION LINE—FRITZ ZIEBARTH

FEATURES	Length-Line Mi.	Period	To Date	Percent
Footings Constructed	237.0	7	210	88.6
Towers Erected	237.0	5	192	81.0
Wire Strung	237.0	7	164	69.2

COMPLETED FEATURES

CANAL, CONDUIT AND SIPHON

CONTRACTOR	FEATURE AND NAME OR SCHEDULE	Length in Miles	Work Started	Work Completed
UNITED CONC. PIPE CO	LITTLE MORONGO SIPHON	0.13	2-27-34	8-20-34
M.W.D.—FORCE ACCT.	FAN HILL COND. & SIPHON	0.32	10-21-33	11-19-34
MORRISON-KNUDSEN CO.	BIG MORONGO & SAN ANDREAS SIPHONS	1.86	2-12-35	9-16-36
GRIFFITH COMPANY	Sch. No. 20-C, 21, 22, 23, 23A	12.79	1-5-35	10-13-36
JAHN & BRESSI Const. Co.	Sch. No. 5, CANAL & SIPHON	10.15	12-18-34	11-17-36
	TOTALS	25.25		

THE FUNDAMENTALS OF EFFECTIVE SAFETY WORK

By H. W. HEINRICH

Ed. Note: The following is a brief of the highlights of a paper delivered by H. W. Heinrich before the Contractors' Executive Safety Committee at the Desert Inn, Palm Springs. Mr. Heinrich is a noted authority on safety work, and is the Assistant Superintendent of the Engineering and Inspection Division of the Travelers Insurance Co.

"As a result of research and practical application, satisfactory proof has been established that the *total* cost of accidents in construction and other industrial work is several times greater than the cost of settling Compensation and Liability claims and hospital bills. Efficiency in controlling the quality, quantity, and cost of work or of product is now known to be affected adversely by the identical circumstances that result in accidents.

. . . Effective safety work falls under three main headings:

Creating and maintaining interest.

Fact-finding.

Corrective and preventive action.

. . . The interest of the individual worker is essential. New employees must be instructed, trained, and repeatedly cautioned when they lapse from safe practice.

. . . Unsafe acts of persons cause more than 80% of all accidents, while less than 20% can fairly be charged to the existence of mechanical or physical hazards. A few examples of unsafe acts that have occurred on this project (Colorado River Aqueduct) and that are typical of this 80% accident causation classification, are given below:

1. Riding between muck cars.

2. Using the hands instead of the bar to loosen rock when loading skip hoist.

3. Failing to remove loose rock from sides and roof of tunnel.

4. Working in too close proximity to other employees when swinging axe or sledge.

5. Throwing tools and materials or allowing them to remain as stumbling hazards in work spaces.

. . . In gathering essential accident facts, it is necessary always to name specifically a violation of a definite safe practice rule, and it is of little value to find and record such generalities as carelessness, recklessness, ignorance, inexperience, or poor supervision. . . .

. . . It is true that mechanical and physical hazards, although they account for less than 20% of all accidental injuries, must also be found and corrected. Some examples that are typical of the 20% classification are listed as follows:

1. Tools, such as bars, sledges, hammers, axes, etc., that are worn, dull, or that have loose or splintered handles or are otherwise defective.

2. Defective chains, slings, ropes, or other equipment.

3. Worn, frayed, or defective insulation on electrical conductors.

4. Rock and debris close to tops of embankments, where men are exposed below.

5. Lack of adequate and satisfactory shoring or grading of the sides of excavations.

Accident facts, such as typified by the foregoing examples, must be determined first, whenever an accident occurs; and second, as a result of regular inspection, whether accidents occur or not.

. . . Every qualified and experienced executive or supervisor knows in advance a great deal about hazards that are described as inherent to the job. In short, they know even before there is evidence of such hazards, by reason of accidents, that they probably do exist. Valuable preventative work, therefore, can be done in the way of instruction, training, and cautioning employees to be on the lookout for such conditions. Preventative work of this kind is accomplished through discussions with supervisors and workmen and through the posting of bulletins and notices and the holding of employee safety meetings.

The point of greatest value that can be made with regard to corrective and preventative work is that this is directly analogous to the control by executives of any other phase of construction operations, that the methods used are exactly the same, and that in each case best results are secured when there is a full knowledge of the facts involved."

Tenny Blake of the Banning laboratory staff is shown measuring the effect of a compression test on a concrete cylinder sample. The sample is shown failing under a compressive load of 4,680 pounds per square inch, although the concrete from which this particular specimen was taken is only required to have a compressive strength of 3,000 pounds per square inch. The total load being applied to the sample by the Universal testing machine amounted in this case to 135,000 pounds. The machine is capable of delivering a compressive load of 300,000 pounds. Records at the Banning lab indicate that to date 20,000 of these 6 in. x 12 in. samples have been tested, the samples having been taken from concrete placed in various aqueduct sections. In addition to these tests, 20,000 cement briquetts have been tested for tensile strength as a part of the acceptance tests for cement purchased for use on the job. Many thousands of specimens of aggregates and cement mixes have also been tested at the Banning laboratory.

NEWS FROM FIELD AND OFFICE

This studious pipe smoker is Cliff Gray, who operates the big Monighan dragline on Thompson-Starett's conduit schelude 15. Cliff has been operating draglines on Colorado River Aqueduct construction since 1934, having been with Thompson-Starett for the past year and a half.

* * *

One of the proudest of proud papas is Henry "Hank" Mills, M.W.D. tunnel inspector in the Distribution Division. The reason for the bursting buttons on the front of his manly "buzzom" was the arrival in his household on January 7, of Betty Louise Mills. (Ed. Note: The Distribution society correspondent is hereby fined a month's pay for not sending in the item sooner.) "Hank," who is one of the old-timers with the District, used to be a footballer at S. C. in the good old days when it was safe to play the Trojans on the nose against all comers.

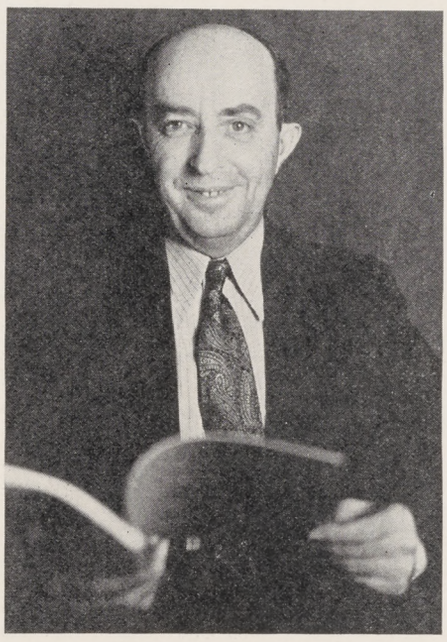
* * *

One of the interesting and beneficial activities being carried out along the eastern end of the aqueduct is the formation of Sunday School classes for the children of District and Contract employees. The Sunday School at Cross Roads has an average attendance of more than 40, and classes have been held there since October, 1935. This work is under the auspices of the Fundamental Evangelistic Association, of Los Angeles, and is conducted by the Reverend Norman M. Sorensen and his family, who live at Cross Roads. Other services are conducted at the Wood and Bevanda Camp in Division 2, and at Desert Center. Aqueduckers of all ages are cordially invited.

Aqueduct Temperatures
January 16 to January 31, 1937

	Max.	Min.
Div. 1	63°	21°
Div. 2	63°	21°
Div. 3	61°	20°
Div. 4	57°	23°
Divs. 5 and 6	56°	16°

Recent transfers from Division 4 to Division 3 were Chainmen Oscar Schur and John Penprase, and Inspector Thomas C. Archer.



"Ed" Miller, the Assistant Purchasing Agent, has a good reason for wearing this broad smile inasmuch as the picture was taken the day after his recent marriage which took place at the Little Chapel in Santa Ana on the evening of January 25. Mr. Miller's bride was the former Mona Mae Hamilton of Louisville, Kentucky.

* * *

Due to the completion of various schedules, and construction features, and the beginning of new types of work, many District field employees are enjoying a change of scenery in connection with their daily work. Transfers from January 16 to January 30, inclusive, included the following:

John Peeler, Inspector on Division 2, transferred as Inspector to Division 3.

Inspector Roy Lawrence transferred to Division 3 from Division 2.

R. A. Underwood, an Inspector at Division 4, has been moved to Division 3 in the same capacity.

Charles Crow, formerly Inspector at Division 4, has also been transferred to Division 3.

Jack R. Bickford, Chainman at Division 4, will now do the same type of work on Division 2.

Bert Anthony has moved west from Division 2 to Division 3 as an Inspector.

* * *

The second match of the Aqueducker's 1937 Golf Tournament will be held on Sunday morning, February 28, at the Baldwin Hills Golf Course (Slauson west of La Brea). The time is 10:15 A. M. and entrants must be on time in order to qualify. Green fee of $1.25 must reach the Treasurer (C. B. White, Accounting, L. A.) not later than February 20. To be eligible for the low net prize of a matched set of Bobby Jones woods, entrants can miss only one match, and must pay the green fee for the match not played. A decided increase in attendance was noted at the last match, held on January 13, at Sunset Fields. Thirty-two aqueduckers entered this match, Duke McConaghy, Purchasing, winning the low net with a score of 71. Judging by the increasing interest and the slicing down (no pun) of scores, this M.W.D. free-for-all will soon be in the class of the L. A. Open.

* * *

Gene Ellingford, "hello-man" (telephone operator to you) de luxe of the District's operating force. It'd be hard to get mad at a chap with a grin like this even if he did give you a wrong number. Gene says he wears the beret to keep the hair out of his eyes during the graveyard shift.

DISTRICT EMPLOYEES CONTRIBUTE GENEROUSLY TO FLOOD RELIEF

Once again exhibiting their generosity toward those in need, Colorado River Aqueduct employees have been contributing liberally during the past ten days to the Red Cross Fund for the relief of the Mid-West flood victims. The money sent to the Red Cross has all been sent voluntarily, there having been no organized drive to collect money from aqueduct employees. Most contributions have been sent by individuals, while in some cases divisions or camps have sent the money as a group. Two outstanding examples of the latter method were by the Banning office staff, and the Distribution Division M.W.D. employees. The Banning group sent $75 to their local Red Cross organization, and the Distribution Division contributed $167 to the Los Angeles Chapter of the Red Cross.

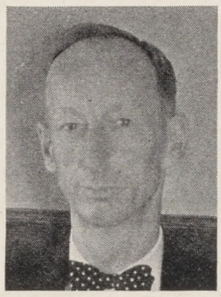
AWARDS MADE FOR ROAD EQUIPMENT AND SEWERS

The District's Board of Directors recently awarded a contract to the Lewis Construction Co., of Los Angeles, for providing and operating road maintenance equipment to be used in connection with roads along the transmission lines. The amount of the contract was $16,450. At the same time a contract was awarded to G. E. Kerns, of Long Beach, amounting to $2,761, for constructing a sewer system for the permanent camp at Eagle Mt.

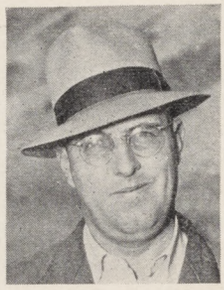
Ham (and maybe eggs) desert style. George Gardner, Instrumentman on Division 2, is caught in the act of putting a shovel to one of its better uses.

Who's Who On the Aqueduct

Grant Miner



Ezra B. Rider



Crawford Strohecker

GRANT MINER

Superintendent, Iron Mt. Pumping Plant, Wood and Bevanda.

Born April 6, 1898, at Richland Center, Wisconsin. . . . Obtained Bachelor of Science degree from Carleton College, Northfield, Minnesota, and B.S. in Civil Engineering from Massachusetts Institute of Technology, Cambridge, Mass. . . . 1915-1921, Concrete road construction in Wisconsin with the Miner Construction Co. . . . '21-'31, Building construction—private, commercial, industrial—municipal reservoir, storage, and water filtration systems. All in Northern California. . . . '31-'36, bridge construction, and oil mat highway construction in New Mexico. In partnership with his brother, J. H. Miner. . . . Until 1927 had been in partnership with his father. . . . November, 1936, to date, Supt. for Wood and Bevanda at Iron Mt. Pumping Plant. . . . Lists photography as his hobby. . . . Is married.

EZRA B. RIDER

Engineer, Experienced, M. W. D.

Born at Fitch Bay, Quebec, Canada, January 23, 1883. . . . Bachelor of Arts in 1908, and B.S. in Mining in 1909 at McGill University, Canada. . . . Associate Member Engineering Institute of Canada, and Member American Institute of Mining Engineers. . . . '09-'11, mine surveying, Consolidated Mining and Smelting Co., Trail, B. C. . . . '11, prospecting for A. M. Campbell, Perth, Ontario. . . . '12-'20, mining, including underground surveying, cost accounting, efficiency work, and investigation of methods, Phelps Dodge Corp., Bisbee, Arizona. . . . '20-'21, mining development work, Oil Dominion Copper Co., Globe, Arizona. . . . '22-'25, in private business in Hollywood. . . . 1925-1930, L. A. Dept. of Water and Power, Mono Basin Water Supply, and Colorado River Aqueduct investigations. . . . With M.W.D. since 1930. . . . Old-timers will remember Mr. Rider as the District Personnel Officer during the period September, 1931, to December, 1932. He handled registrations for unclassified positions, as well as applications for classified service. . . . Since that time his duties have been in connection with engineering and cost matters. . . . Is married.

CRAWFORD STROHECKER

Superintendent for Dixon-Case, Hayfield Pumping Plant.

Born in New Castle, Penn., March 22, 1904. . . . Attended Manual Arts High School, Los Angeles. . . . 1921-1933, Foreman and Superintendent for Edwards, Wildey, and Dixon Comany on various types of building construction. . . . 1934, Superintendent for Bannister-Field Company. . . . 1935-1936, General Superintendent for Kress House Moving Company, Construction Department, Los Angeles. . . . November, 1936, to date, Superintendent for L. E. Dixon Co.-Case Construction Co., Hayfield Pumping Plant. . . . Is married and has one daughter. . . . Hunting and fishing are his hobbies.

LARGE ATTENDANCE AT VALENTINE'S DAY PARTY

This issue of the NEWS went to press on the eve of the Employees' Association Valentine's Day Dinner and Dance being held Saturday evening, February 13th, at the Oakmont Country Club in Glendale. Based on advanced ticket sales, and on requests for reservations that were coming in late in the week, the affair promised to be very successful. In spite of the long distances to be traveled by field employees, a large number of people from the eastern part of the job were planning on attending. By Monday, February 8, more than forty reservations had been made by employees working in the Coachellas, and approximately the same number had been requested by Banning office workers. The prize for the greatest number and longest distance group, should certainly be awarded to Division 3, who is sending 30 socialites clear from Eagle Mountain.